REMARKS/ARGUMENTS

In the Office action dated January 31, 2005, the examiner notes applicants' previous election of the invention of Group III, claims 10 and 11, and requests affirmation of the election. Applicant hereby affirms this election.

In addition, the examiner rejects claim 10 under 35 U.S.C. § 102(b) as allegedly anticipated by Yoshida, H., "Degradation Mechanism of Alkyl Carbonate Solvents Used in Lithium-ion Cells During Initial Charging," *Journal of Power Sources*, vol. 68, pps. 311-315 (1997)("Yoshida"). Applicants have amended independent claim 10 to recite that the gas generated during initial charging "has a H_2 content of 0.2 volume % or less." In contrast, Yoshida discloses a H_2 content only as low as 1.1 vol%, a value nearly six times that claimed.

The examiner also rejects claims 10 and 11 under 35 U.S.C. § 103(a) as allegedly obvious over Yoshida in view of Thomas, P., "Electrochemical Insertion of Sodium into hard Carbons," *Electrochemica Acta*, vol. 47, pps. 3303-3307 (2002)("Thomas"). However, Thomas discloses a H_2 content of 0.4 vol%, a value twice that claimed in the present application.

Although the examiner asserts that the H_2 contents disclosed in Yoshida and Thomas are "close to" that claimed in the present application, applicant notes that the H_2 content disclosed in Yoshida is nearly six times that claimed, and that the H_2 content disclosed in Thomas is twice that claimed. In light of these significant differences, the H_2 contents of Yoshida and Thomas cannot be said to be "close to" that claimed in the present application.

In rejecting claims 10 and 11 based on Yoshida and Thomas, the examiner appears to argue that the differences between the H_2 contents disclosed in Yoshida and Thomas and that claimed in the present application are minor, and therefore that the claims are prima facie obvious. See Office action, page 7, citing In re Boesch, 205 U.S.P.Q. 215 (Fed. Cir.)("Boesch") and Titanium Metals Corp. of America v. Banner, 227 U.S.P.Q. 773 (Fed. Cir. 1985)("Titanium Metals"). However, in Boesch, the cited prior art described metal alloys similar in composition to the claimed alloys. In fact, the cited prior art described alloys having compositional limits within the range claimed in the subject application. The main difference between the claimed alloy and the alloys described in the prior art was the claim requirement that the Nv value (a measure of the average electron vacancy concentration per atom in the alloy matrix) be about 2.35. The prior art disclosed no such requirement, and the applicant in Boesch failed to provide any evidence that the alloys of the prior art did not meet the claimed Nv value. Because the composition of the claimed alloy was within the range disclosed in the prior art, the court upheld the finding of prima facie obviousness.

Unlike Boesch, however, the composition of the generated gas claimed in the present application is not within the range disclosed in the cited prior art. Rather, the H_2 content of the gas is well outside the range disclosed in either Yoshida or Thomas. Therefore, the examiner's reliance on Boesch appears misplaced.

Similarly, in Titanium Metals, the cited prior art described alloys having compositional limits within the range claimed in the subject application. The subject application also claimed an alloy having a composition similar to, but not within the range disclosed in the prior art. Specifically, the claimed alloy comprised 0.3% Molybdenum and 0.8% Nickel, the balance being Titanium. The prior art disclosed an alloy comprising 0.25% Molybdenum and 0.75% Nickel. The court concluded that the claimed proportions were so close to those described in the prior art that the differences between the claims and the cited prior art were minor, and found that the claims were obvious over the cited prior art.

Unlike Titanium Metals, however, the claimed composition of the generated gas is not close to that described in Yoshida or Thomas. In Titanium Metals, the difference in composition between the claimed alloy and that described in the cited prior art amounted to only about a 20% increase with respect to the amount of Molybdenum, and less than a 7% increase with respect to the amount of Nickel. In contrast, the difference in composition between the generated gas according to the claimed invention and that disclosed in Yoshida amounts to a 550% increase. Likewise, the difference in composition between the generated gas according to the claimed invention and that disclosed in Thomas amounts to a 200% increase. Given that the H_2 contents disclosed in Yoshida and Thomas are significantly greater than the claimed H_2 content, the differences between Yoshida and Thomas and the claims of the present application

cannot be said to be minor. Therefore, the examiner's reliance on Titanium Metals also appears misplaced.

Finally, the examiner rejected claims 10 and 11 under 35 U.S.C. § 103(a) as allegedly obvious over Igarashi (U.S. Patent No. 6,573,004). In making this rejection, the examiner asserts that the method for preparing a battery disclosed in Igarashi is "equivalent" to the method described in the present application. Applicant respectfully disagrees.

Igarashi discloses the use of a polyvinyl alcohol binder either by itself or in combination with another "conventional" binder. (Column 6, lines 13-46). Although Igarashi lists styrene-butadiene copolymers and cellulosic compounds as possible "conventional" binders for use with the polyvinyl alcohol binder, Igarashi does not disclose the use of these "conventional" binders without the polyvinyl alcohol binder. In fact, Igarashi expressly teaches away from the use of "conventional" binders by themselves, noting that such binders have poor binding strength. (Column 2, lines 41-54; Column 2, line 66 to Column 3, line 4). Therefore, the method disclosed in Igarashi cannot be said to be "equivalent" to that disclosed in the present application, and remaining claim 10 is allowable over Igarashi.

Claim 10 now remains pending in this application, with claims 1-9 being withdrawn from consideration. Applicants have amended claim 10 and canceled claim 11. In light of the above amendments and remarks, applicants submit that claim 10 is in condition for allowance. Applicants therefore respectfully request a timely indication of allowance. However, if there are

any remaining issues that can best be addressed by telephone, applicants ask the examiner to contact applicants' counsel at the number below.

Respectfully submitted,
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